Sheet 1 of 7	,	•								
FORM PTO 1449 (m	,	IENT OF COMMER	re	ATTY DOCKET I 2003_1578	NO.		SERIAL NEW	NO. 10/6	a5,78	0
PATEN	T AND	TRADEMARK OFFICE	CE	APPLICANT Mitsuaki OSH	IIMA					
·		sheets if necessary)  PTO: October 30,	2003	FILING DATE October 30, 2	2003			GROUP 6	2611	
	-			U.S. PATENT DO						
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NA		CLA	ASS	SUBCLASS	FILING I APPRO	
PP	AA	5,311,550	5-10-94	Fouch	e et al.			\ .		
PP	AB	4,630,287	12-16-86	Arms	trong					
PP	AC	4,271,527	6-2-81	Arms	trong		·			
PP	AD	5,050,188	9-17-91	D	irr					
pp	ΑE	5,398,073	3-14-95	w	'ei	. \	\			
98	AF	5,452,015	9-19-95	Huly	alkar 					
49	AG	5,565,932	10-15-96	Citta	et al.					
99	АН	5,481,412	1-2-96	Banna	i et al.					
PP	Al	3,909,721	9-30-7 <b>5</b>	Bussga	ng et al.				-	
				FOREIGN PATENT	DOCUMENTS					
۶,		DOCUMENT . NUMBER	DATE	COU	NTRY	CL	ASS	SUBCLASS	TRANS YES	LATION NO
m	AJ	0365431	4-25-90	E	Р			<u> </u>		×
	AK	<del>0485105</del>	<del>5 13 92</del>	E	<b>P</b> -				*	·
M	AL	92/14343	8-20-92	W	0	\	\		Х	
PP	AM	89/08366	9-8-89	· w	<u>'</u> O		$\overline{}$		×	
	AN	<del>0031193</del>	7-1-81	-	P				*	
		ОТ	HER DOCUMENT	(S) (Including Autho	or, Title, Date, Pert	inent Page	s, Etc.)			
	AO	<del>Shinji Matsumot</del> <del>Telecommunica</del>	o et al., "200 h tions Review,	/lb/s 16 QAM D January 1982,	igital Radio-Re vol. 24, no. 1,	elay Sys <del>pages 6</del>	tem Ope 5 <del>-73</del> .	erating in 4 and	5 GHz Ban	ds", Japan
	AP	M. Pecet et al., Image Commun	Compatible Cication, Octob	oding of Televil er 2, 1990, no	sion Images, F 3, pages 259-1	Part 2 C 268.	ompatib	ile System", Sig	nal Process	sing.
	AQ	Mitsuaki-Oshima	a, "Constellatio	n-Code Divisio	n Multiplex for	Digital I	HDTV", I	EEE, 1992, pag	ges 1086-16	992.
EXAMINER		P	humphi	1	DATE CONSIDI	ERED		9/11/07		

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

Sheet 2 of 7	.,	•		·					
FORM PTO 1449 (π	•	MENT OF COMMER	CF	ATTY DOCKET NO. 2003_1578	•	SERIAL NEW	NO. 10	695,	780
PATEI LIST OF RÉ	NT AND	TRADEMARK OFFI	CE	APPLICANT Mitsuaki OSHIMA		•			
		o PTO: October 30,	2003	FILING DATE October 30, 2003			GROUP	2611	
				U.S. PATENT DOCUME	NTS				
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CL	ASS	SUBCLASS		DATE IF
PP	AA.	4,227,152	10-7-80	Godard et a	ı.				
PP	AB	4,525,846	6-25-85	Bremer et a	1.				
PP	AC	4,751,478	6-14-88	Yoshida					
PP	AD	4,891,806	1-2-90	Farias et al					
PP	ÀΕ	4,903,125	2-20-90	Parker		\			
PP	AF	4,937,844	6-26-90	Kao					,
PP	AG	5,164,963	11-17-92	Lawrence et	al.				
PP	АН	5,555,275	9-1996	Oshima					
PP	Al	5,565,926	10-15-96	Bryan et al					
-	<del></del>		F	OREIGN PATENT DOCU	MENTS				
		DOCUMENT NUMBER	DATE	COUNTRY	CL	ASS	SUBCLASS	TRANS YES	LATION NO
	AJ	<del>-0311188</del>	<del>4-12-89</del>	<u>E₽</u> -				<del>*</del>	
	AK	<del>9329158</del>	8 <del>-23-89</del>	<del>EP</del> -		·		<del>. X-</del>	
	AL	<del>-64-5136</del>	<del>1-10-89</del>	-JP		\		<del>*-</del>	
	АМ	63-28145	<del>-2-5-88</del>	<del>JP</del>				<del>-*</del>	
	.AN	<del>62-133842</del>	<del></del>	₩ <u></u>				*	
		OT	HER DOCUMENT(	S) (Including Author, Title,	Date, Pertinent Page	s, Etc.)			
	AO	Tricia Hill et al., GOM-31; June 1	<del>"A Performanc</del> <del>1983, no. 6, pa</del>	e Study of NLA 64-5 ges 821-829	itate QAM", IEEE	Transa	ctions on Comn	<del>nunications,</del>	<del>vol</del> .
	AP	Hideki Ishio et a	I., "A Proposal	of a Carrier Digital T	ransmission Sys	tem Usir	ng Multi-Level A	PSK", page	6 1 29 mm
	AQ	Shanmugam, "D	Pigital and Anal	og Communication S	Systems" 1979, p	<del>. 272</del> .			
EXAMINER		pt	ung phin	DATE	CONSIDERED	•	9/11/07		

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

Sheet 3 of 7										
	DEPART	WENT OF COMMER		ATTY DOCKET 2003_1578			SERIAL NEW	. NO. 10 / 1	695,7	-80
PATER LIST OF RE	NT AND	TRADEMARK OFFI	CANT(S)	APPLICANT Mitsuaki OS	SHIMA					
		al sheets if necessary) to PTO: October 30,		FILING DATE October 30,	2003			GROUP	2611	
				U.S. PATENT D	DOCUMENTS					
EXAMINER INITIAL		DOCUMENT NUMBER	, DATE	1	AME	CD	ASS	SUBCLASS		DATE IF
PP	AA	5,105,442	4-14-92	V	<i>N</i> ei					
P	АВ	4,048,572	9-13-77	Doglic	otti et al.					
PP	AC	5,282,019	1-25-94	Basil	le et al.					
PP	AD	5,311,547	5-10-94	<u>ν</u>	<b>Vei</b>					
. PP	AE	5,267,021	11-30-93	Ramchar	ndran et al.	]	\			
PP	AF	5,038,219	8-6-91	Yamasi	hita et al.					
₽₽	AG	5,087,975	2-11-92	Citta	et al.					***************************************
PP	AH	5,086,340	2-4-92	Citta	et al.					
PP	AI	5,243,629	9-7-93	W	Vei					
	•			FOREIGN PATENT	r DOCUMENTS					
		DOCUMENT NUMBER	DATE	1	JNTRY	CIV	ASS	SUBCLASS	TRANSI YES	SLATION S NO
	AJ	<del>53-13765</del> 7	12-1-78		₩				*	
	AK	0282298	9-14-88	Ear	торе				*	
	AL	0392538	1 <del>0-17-90</del>	Eur	<del>rop</del> e				共	
	AM	0490552	<del>6-17-92</del>	Eur	rope				×	
PP	AN	0506400	9-30-92	Eur	rope				х	
	<del></del>	OTI	HER DOCUMENT(S	S) (Including Author	or, Title, Date, Perti	iinent Pages	s, Etc.)			•
	AO	Khaled Fazel et al., Combined multilevel coding and multiresolution modulation, February 8, 1993, Pages 1081- 1085								
pp	АР	P. Hoeher et al., Global Telecomn	Performance on nunications Co	of an RCPC-Co onference "Glo	oded OFDM-babecom '91", Da	ased Digi ecember	ital Audio 2-5, 199	o Broadcasting 31, Vol. 1 of 3, I	(DAB) Syst Pages 2.1.1	iem, IEEE - 2.1.7
	AQ	K. M. Uz et al., C Pages 283-292	Combined multing	resolution sou	rce coding and	1 modulat	tion for d	ligital broadcas	t <del>of HDTV*,</del>	<del>1092</del> ,
EXAMINER		Phumphus DATE CONSIDERED 9/11/07								

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

Sheet 4 of 7	<u> </u>	• •								
FORM PTO 1449 (m	•	IENT OF COMMER	CE	ATTY DOCKET N 2003_1578	10.		SERIAL NEW	NO. 10/6	,95,78	0
PATEN	IT AND	TRADEMARK OFFICE	CE	APPLICANT Mitsuaki OSH	IMA					
(Us	e several	sheets if necessary)  PTO: October 30,	.,	FILING DATE October 30, 2	003			GROUP	261	)
			· · · · · · · · · · · · · · · · · · ·	U.S. PATENT DO	CUMENTS					
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAN	ΛE	CLA	ss	SUBCLASS		DATE IF PRIATE
PP	AA	5,142,353	8-25-92	Kageyan	na et al.					
PP	AB	5,197,061	3-23-93	Halbert-Las	salle et al.					
Pf	,AC	5,291,289	3-1-94	Hulyalka	ar et al.					
99	AD	5,166,924	11-24-92	Mod	ose					
RP	AE	4,940,954	7-10-90	Aubert	et al.					
PP	AF	5,128,758	7-7-92	Azadega	an et al.		$\perp$			
PP.	AG	5,038,402	8-6-91	Robi	bins		$\setminus$			
PP	АН	5,638,112	6-10-97	Bestle	r et al.		\	\		
	,			FOREIGN PATENT	DOCUMENTS	<del></del>		·		
		DOCUMENT NUMBER	DATE	COUN	ITRY	cu	ASS	SUBCLASS	TRANS YES	LATION S NO
18	AI	0448492A1	9-25-91	Euro	ope	$\Lambda_{-}$				х
lp	AJ	0485108A2	5-13-92	Euro	ope .		•		х	
	AK	0525641A2	2 <del>-3-93</del>	Eur	<del>ope</del>	\	\		-X	
	AL	0 <del>540231A</del> 2	<del>5-5-93</del>	Eur	<del>9pe</del>		$\lambda$		*	
M	АМ	0531046A2	3-10-93	Euro	ope				X	
· · · · · · · · · · · · · · · · · · ·	1	от	HER DOCUMENT	(S) (Including Autho	r, Title, Date, Pert	linent Page	s, Etc.)			
pr	AN	K. M. Uz et al., I	Multiresolution	Source and Ch	annel Coding	for Digit	al Broad	lcast of HDTV,	1992, Page	s 61-69.
	AO	Nambi Seshadri Fading Channel					nequal E	cror-Protection	for the Ray	loigh
m	AP .	William F. Schre	eiber, Spread-	Spectrum Telev	ision Broadca	sting, SM	MPTE Jo	ournal, August	1992, Pages	s 538-549.
EXAMINER	. <del></del>	ام	rung plin		DATE CONSIDI	ERED		9/11/0	7	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

Sheet 5 of 7						<del></del>					
FORM PTO 1449 (	DEPARTI	MENT OF COMMER	RCF	ATTY DOCKE 2003_1578			SERIAL NEW	L NO.	10/	695,7	180
PATE LIST OF R	ENT AND	TRADEMARK OFF	FICE CANT(S)	APPLICANT Mitsuaki OS	SHIMA						
		al sheets if necessary) to PTO: October 30,		FILING DATE October 30,				GROUP	]	2611	
				U.S. PATENT D	DOCUMENTS						
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	N	NAME	CLAS	ss	SUBCL	LASS		DATE IF OPRIATE
71	AA .	5,063,445	11-5-91	Nishiza	awa et al.						
PP	АВ	5,819,000	10-6-98	Os	shima						
18	AC	5,999,569	12-7-99	Os	shima					·	
PP	AD	5,892,879	4-6-99	Os	shima		1				
				FOREIGN PATEN	IT DOCUMENTS					<del></del>	
	1_	DOCUMENT NUMBER	DATE		UNTRY	CLAS	3S	SUBCL	LASS	TRANSI YES	SLATION S NO
	AE	7-99522	<del>4-11-95</del>	Je	<del>apan</del>					abstract	
	AF	7-79415	<del>3-20-95</del>	Je	<del>apan</del>					a <del>bstract</del>	1
	AG	<del>5-7556</del> 8	3 <del>-20-9</del> 3	<del>J</del> s	<del>apan-</del>					abstract	
PP	АН	86-07223	12-4-86	V	wo					×	
M	AI	2 187 611	9-9-87	Great	t Britain					X .	1
	AJ	<del>05/0454</del> 1	1 <del>0-10-8</del> 5	+	₩Ð					<b>X</b>	
	AK	<del>04-196822</del> ,	<del>7-16-92</del>	ta	<del>ipan</del>	·		,	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	ļ	<del></del>
	AL	<del>2-16697</del> 9	<del>6-27-90</del>	<del>Je</del>	<del>opan</del> .			V		abstract	
	AM	64-74836	% <del>3-20-89</del>	<del>Ja</del>	<del>ipan</del>					a <del>bstrac</del> t	
	AN	<del>-53-108215-</del>	<del>9-20-78</del>	Ja	<del>ipan</del> :					abetract	
· ·	Т	011	HER DOCUMENT(	S) (Including Auth	nor, Title, Date, Pertir	inent Pages, I	Etc.)				
	AO	M <del>artin Vetterli et</del> S <del>ystems and Sig</del>	al., Multiresoft	ution Coding T g. Volume 3, N	echniques for E May 1992, Page	Digital Tele 25 161-187	evision	A Revi	ew, Mc	ultidimension	naf :
	АР	E <del>zio Biglieri et al</del>	I., Introduction	to Trellis-Code	ed Modulation v	with Applic	ations,	, April 6,	1992, 1	Pages 173-1	267
	AQ	English Languag	je Abstract of E	European Pate	mt No. 93 30 75	<del>, , , , , , , , , , , , , , , , , , , </del>	•		•		;
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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

Sheet 6 of 7	•	•									
FORM PTO 1449 (mi	•	ENT OF COMMER	CE	ATTY DOCKET N 2003_1578	10.		SERIAL NEW	NO.   C	16	95,=	180
PATEN LIST OF REI	T AND T	FRADEMARK OFFICES CITED BY APPLICA	CE	APPLICANT Mitsuaki OSH	IMA						
(Us	e several	sheets if necessary)  PTO: October 30,		FILING DATE October 30, 2	003			GROUP	9	2611	
				U.S. PATENT DO					<u>_</u>		
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAM		CLA	ss	SUBCLASS	5	FILING D	
99	AA	4,636,876	1-13-87	Schw	rartz	\					
PP	AB	4,855,692	8-8-89	Kennar	d et al.	\					,
18	AC	4,873,701	10-10-89	Tret	ter	$\perp$					
PP	AD	4,958,360	9-18-90	Sa	ıri	$\overline{}$					
PP	AE	5,115,453	5-19-92	Calderba	nk et al.		/·				
18	AF	5,168,509	12-1-92	, Nakamu	ra et al.						
PP	AG	5,600,672	2-4-97	Oshima	et al.						
PP	АН	6,049,651	4-11-00	Osh	ima			·			
98	Al	6,256,357	7-3-01	Osh	ima		· \		$\sqrt{}$		
•			,	FOREIGN PATENT	DOCUMENTS						
, , , , , , , , , , , , , , , , , , ,		DOCUMENT NUMBER	DATE	CON	ITRY	CL	ASS	SUBCLAS	s	TRANSL YES	ATION NO
	AJ	0 <del>122805</del>	10-24-84	E	Р.	_		<u> </u>		*	
	AK	63-180280	7 <del>-25-88</del>	H	a .		<del>,</del>		а	<del>bstract</del> .	
	AL	64-68144	3 <del>-14-89</del>	Jap	<del>en</del>		<u> </u>		а	bstract-	
0P	АМ	5-218978	8-27-93	Jap	an						х
64	AN	3-69295	3-25-91	Jap	an .		$\overline{}$				×
		от	HER DOCUMENT	(S) (Including Autho	r, Title, Date, Pertin	ent Page	s, Etc.)	·	.,		
	AO	Kazuhiko Nitado C <del>poference on</del>	ori, Synthesis ( Communicatio	of Multichannel ns, June 14-16,	<del>Orthogonal VS</del> 1976, Volume	<del>B Signa</del> 1, Page	es 3-25	uadrature M • 3-29 <sub>p</sub>	ethod,	1976-Inte	ernational
	AP	Themas M. Cov	er, Broadcast	Channels, IEEE	Transactions	on Info	mation '	Theory, Jan	uary 1	<del>972, Page</del>	96 2-14
	AQ	"O <del>ptimum Weig</del> C <del>OM-26, No. 6,</del>	hted PCM for t June 1978, P	Speech Signals ages 872 88	*, Sundberg, IE	EE Tra	nsaction	is on Comm	unicati	ions, Volu	ım <del>ə</del>
EXAMINER	<u> </u>	P	humplus		DATE CONSIDE	RED		9/11/0	7		

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

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Sheet 7 of 7	·	· .	·			· · · · · ·			
FORM PTO 1449 (n		IENT OF COMMERC	CE	ATTY DOCKET NO. 2003_1578		SERIAL NEW	NO. (O/	6 95,=	180
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			7. 7	U.S. PATENT DOCUMENTS					·
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLA	ss	SUBCLASS	FILING (	
PP	AA	5,170,413	12-8-92	Hess et al.					
	AB.								
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		DOCUMENT NUMBER	DATE	COUNTRY	CLA	SS	SUBCLASS	TRANSI YES	
	AD	<del>57-39629</del>	3-4-82	Japan	$\Lambda$			abstract	
	AE	58 <del>-181547</del>	<del>9-26-83-</del>	Japan	11_			abstract	
	AF	6 <del>3-180222</del>	7 <del>-25-88</del>	Japan				abstract	
- M	AG	92/22162	12-10-92	WO				Х	
	АН	<del>2-94814</del>	<del>4-5-90</del>	. <del>Japan</del>	$\bot$			abstract	
	AI	<del>61-70861</del>	<del>4-11-86</del>	J <del>apan</del>				<del>abstrac</del> t	
	AJ	<del>2-218279</del>	8 <del>-30-90</del>	Japan	1			<del>abstrac</del> t	
	AK	<del>2,095,435</del> .	<del>5-10-92</del>	Ganada		\		.,_X	
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	AM	2-141049	5-30-90	Japan			<u> </u>		×
	AN	2 <del>-195732</del> -	8-2-90	Japan				abstract.	
	AO	5 <del>-167833</del>	7 <del>-2-93</del>	Japan			<b></b>	abstract	
	AP	2-260726	10-23-90	Japan	<u> </u>		<u> </u>		Х
	AQ	58 <del>-16142</del> 7	9-26-83	Japan	<u>. </u>			abstract	
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Sheet 1 of 2												
FORM PTO 1449 (n	nodified)	RTMENT OF COMMERC	Œ	ATTY DOCKET NO. 2003_1578		SERIAL N 10/695,		OIP	r ve			
LIST OF	REFERE	ID TRADEMARK OFFIC		APPLICANT Mitsuaki OSHIMA				JUN 0 7 2	005			
		eral sheets if necessary) itted to PTO:June 7, 200	5	FILING DATE October 30, 2003			GROUP 2831 26	TRADEM	P.K.			
			U.	S. PATENT DOCUMENTS								
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME .	CL	ASS	SUBCLASS	FILING D APPROP	ATE IF			
86	AA	3,824,548	7-16-74	Sullivan et al.					·			
88	АВ	3,959,726	5-25-76	Hinoshita et al.	$\prod$			·				
PP	AC	4,303,939	12-1-81	Stephens et al.								
PP	AD	4,303,941	12-1-81	Marti et al.								
PP	AE	4,309,726	1-5-82	Tanaka et al.				·				
PP	AF	4,535,352	8-85	Haskell								
PP	AG	4,564,858	1-14-86	Resch								
. 18	АН	4,581,639	4-8-86	Judge	1							
PP	AI	4,769,819	9-6-88	Matsutani et al.								
PP	AJ	4,794,447	12-27-88	Tsinberg								
PP	AK	4,800,426	1-24-89	Glenn								
98	AL	4,817,192	3-28-89	Phillips et al.								
PP	AM	5,007,088	4-9-91	Ooi et al.								
PP	AN	5,029,003	7-91	Jonnalagadda								
89	AO	5,134,464	7-28-92	Basile et al.								
			FORE	EIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CU	ASS	SUBCLASS	TRANSLA YES	ATION NO			
PB	AP	5-327807	12-10-93	Japan .				abstract				
	·	OTHER	DOCUMENT(S) (II	ncluding Author, Title, Date, Perti	inent Pages,	Etc.)						
	AQ	M <del>asafumi SAITO et</del>	al., "Bit Error F	Rate Characteristics of OF	<del>-DM in M</del> u	ultipath E	nvironment",	<del>-198</del> 1	,			
	AR	Ryutaro OHMOTO e	<del></del>	QPSK Subcarrier Transn	<del>nission", 1</del>	1 <del>991</del>						
EXAMINER	<u>}                                     </u>	Phu	ingplin	DATE CONSIDE	ERED		111167					

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop this form with next communication to applicant.

Sheet 2 of 2											
FORM PTO 1449 ( n		TMENT OF COMMERC	E	ATTY DOC 2003_15			SERIAL N 10/695,				
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		eral sheets if necessary) ted to PTO: June 7, 200	<i>.</i> 5	FILING DAT		·		GROUP 2631	2	.6 1)	
			U.S	S. PATENT DO	OCUMENTS						
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PP	AA	5,181,112	1-19-93	Ci	tta et al.						
PP	АВ	5,377,051	12-27-94	La	ne et al.			1			
PP	AC	5,400,084	3-21-95		Scarpa ·						
PP	AD	5,576,902	11-19-96	La	ne et al.						
PP	AE	5,218,622	6-8-93	Fa	zel et al.		\		•		
PP	AF	5,561,468	10-1-96	Bry	van et al.		\ .	\			
PP	AG	5,598,220	1-97	Ci	tta et al.						
PP	АН	5,802,241	9-1-98	C	Shima						
PP	AI	5,214,656	5-25-93	Chi	ung et al.	·	\				
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		DOCUMENT NUMBER	DATE	C	OUNTRY	Cı	ASS	SUBCL	ASS	TRANSLA YES	TION NO
pp	AJ	7-264148	10-13-95	,	Japan					abstract	
178	AK	7-322219	12-8-95		Japan					abstract.	
M	AL	3-48587	3-1-91	,	Japan					abstract	
	AM							•			
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		OTHER	DOCUMENT(S) (III	ncluding Autho	or, Title, Date, Pertine	ent Pages	, Etc.)				
po	AO	AO  J. A. C. Bingham, "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come", IEEE Communications Magazine, Vol. 28, May 1990, pages 5-8 and 11-14									
ff	AP	B. Hirosaki, "An Ortl Transactions on Co	hogonally Multi mmunications,	plexed QAI Vol. Com-2	M System Using 29, No. 7, July 1	the Di	screte,Fo iges 982-	urier Tra 989	insfor	m", IEEE	
PP	AQ	L. J. Cimini, Jr., "An Multiplexing", IEEE	alysis and Simi Transactions o	ulation of a	Digital Mobile Cications, Vol. Co	Channel om-33,	Using O No. 7, Ju	rthogona ly 1985,	al Fre page	quency Divisi s 665-675 an	on d Annex
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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop this form with next communication to applicant.

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<b>M</b>	AJ	2-154583	6-13-90		Japan		<u></u>		abstract	
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	Υ	OTHER	DOCUMENT(S) (Ir	ncluding Auth	or, Title, Date, Pertine	ent Pages,	, Etc.)			
PP	AO	Shigeki MORIYAMA Spring National Cor Part 2, p. 406, Marc	nvention Record	Propagatio d, The Insti	n Characteristics itute of Electronic	s at VHF cs, Infor	and Ulamation :	HF bands in Urland Communic	ban Area", 19 ation Engine	991 ers,
pp	AP	Yasuhiro ITO et al., Terrestrial Digital Te	"Adaptive Weig elevision Broad	ghted Code casting", IT	e Division Multipl FE Technical Re	lexing (/ port Vol	AW-CDN . 17, No	/i) Transmission 1. 13, pp 27-32,	n System for February 25	i, 1993
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*EXAMINER INITIAL		DOCUMENT NUMBER	DATE		NAME	CLAS	S	SUBCLASS	FILING DATE IF APPROPRIATE		
PP	AA	4,597,090	6-24-86	Fo	rney, Jr.						
99	AB	4,077,021	2-28-78	Csa	njka et al.						
PP	AC	2005/0084750	4-21-05	Wa	ing et al.		,				
PP	AD	2005/0058633	3-17-05	Eps	tein et al.						
PP	ΑE	2005/0922922									
PP	AF	4,918,437	4-17-90	Jasi	nski et al.						
PB	AG	5,023,889	6-11-91	Divs	alar et al.						
98	АН	5,063,452	11-5-91	Hi	gurashi						
98	Al	5,124,852	6-23-92	Suv	wa et al.						
98	LA	5,136,380	8-4-92		Cho		(				
PP	AK	5,146,335	9-8-92	Kii	m et al.		П	,			
PP	AL	5,148,422	9-15-92	Sa	ko et al.		$\prod$				
PP	АМ	5,218,436	6-8-93	Sugiy	ama et al.		$\mathbb{I}$				
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P	AN	2627574	7-21-04		CN	\					
W	AO	1529838	5-11-05		EP				abstract		
- pp	AP	1499725	5-26-04		CN			\	only abstract		
PP	AQ	2004-159207	6-3-04		JP			\ \	corresponds to AP		
j.	AR	1528854	5-11-05		EP		$\Box$		only abstract		
pp	AS	52118	12-16-02		UA	\	abla		only abstract		
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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

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*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
PP	AA	4,267,592	5-12-81	Craiglow			
PP	AB	4,601,045	7-15-86	Lubarsky			
PP	AC	4,912,706	3-27-90	Eisenberg et al.			
PP	AD	4,914,655	4-3-90	Johannes et al.			
19	AE	5,018,198	5-21-91	Takahashi			
99	AF	4,003,002	1-11-77	Snijders et al.			
88	AG	4,053,713	10-11-77	Nitadori			
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M	AJ	3-13145	1-22-91	Japan			abstract
mg .	AK	4-322592	11-12-92	Japan			abstract
NO TO THE PERSON NAMED IN COLUMN TO	AL	63-253738	10-20-88	Japan			abstract
No	АМ	62-502932	11-19-87	Japan			abstract
<u> </u>	AN	58-107740	6-27-83	Japan			abstract
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PP	AA	5,210,770	5-11-93		Rice				1			
99	АВ	5,519,730	5-21-96	Jas	per et al.							
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8.0	AA	4,882,725	11-21-89	Noda et al.									
88	АВ	4,985,769	1-15-91	Yasumoto et al.									
1P	AC	5,276,507	1-4-94	Uwabata et al.									
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PP	AJ	60-24753	2-7-85	Japan			partial & abstract						
PP	AK	2-278940	11-15-90	Japan			partial & abstract						
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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.